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Resistant barley varieties may facilitate control of Ramularia leaf spot

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Ramularia leaf spot has been widespread on barley in Denmark since 2002. Resistance properties of Danish barley cultivars have been investigated and indicates that varietal resistance can be efficient in control of Ramularia leaf spot

Introduction

Widespread and heavy infections of Ramularia leaf spot (RLS, see picture 1 below) on barley were observed in Denmark for the first time in 2002 (Pinnschmidt & Hovmøller 2003, 2004). Surveys and research efforts such as investigations into resistance properties of Danish barley cultivars have been initiated since then.



The data available to date have now been analysed to characterise the expression of RLS resistance of barley cultivars and its relation to resistance against other diseases in view of potential uses for RLS control and resistance breeding.

Picture 1. Severe Ramularia leaf spot (RLS) infection on a susceptible spring barley cultivar after flowering.

Data from multi-environment surveys

The major part of the data presented here is from multi-environment surveys of the Danish Institute of Agricultural Sciences (DIAS), Variety Testing Division, in which commercial barley varieties and advanced breeding lines were grown on more than 20 sites throughout Denmark from 2002 to 2005 (Anon. 2004, Anon. 2005, www.planteinfo.dk). One data set was obtained from a field trial conducted at the DIAS research centre in Flakkebjerg in 2003, in which spring barley cultivars were inoculated with a suspension of RLS mycelium produced *in vitro*.

The severity of RLS and other major leaf diseases was visually assessed as percent diseased leaf area in each plot after the beginning of grain filling. Only data sets from environments with more than 10% RLS severity on the most susceptible cultivar were considered. RLS observations for a

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